

KIC 008453581

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
008453581-01	OBS	No	403.675893	380.054325	175.4	15.164	7.1	7.1	1.72	5687	2.50	2.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008453581-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

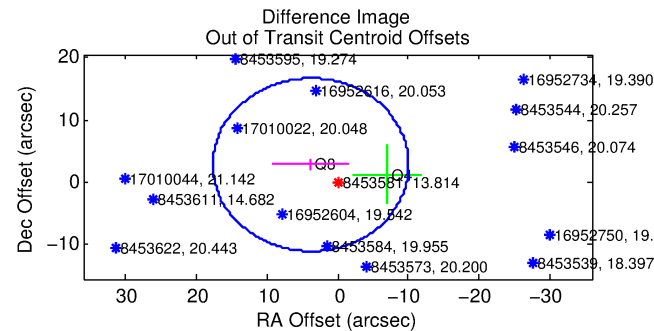
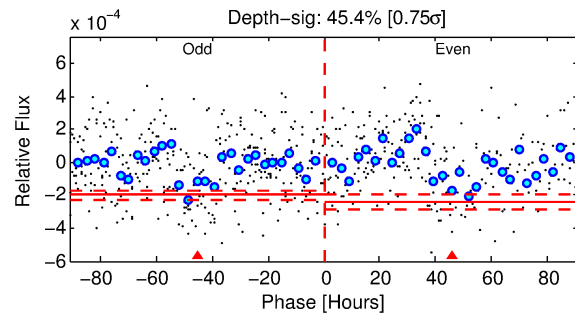
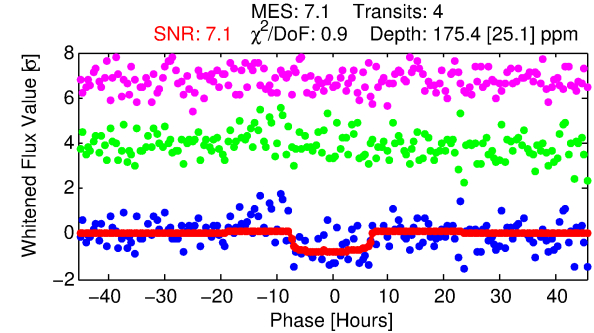
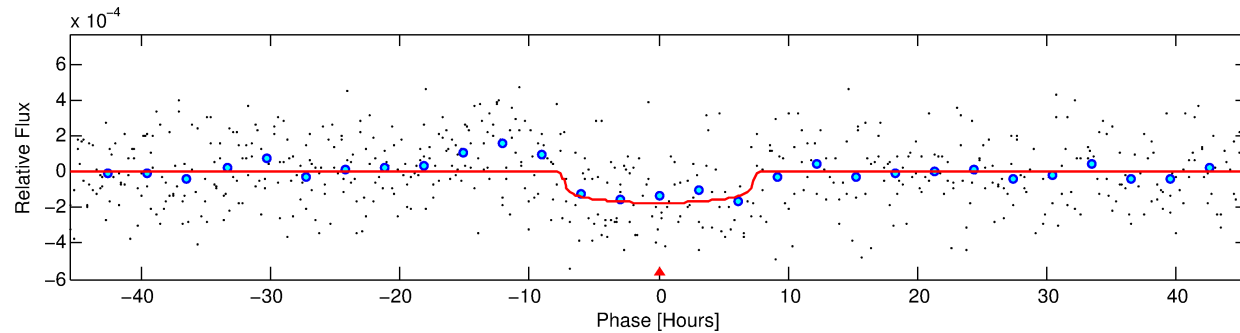
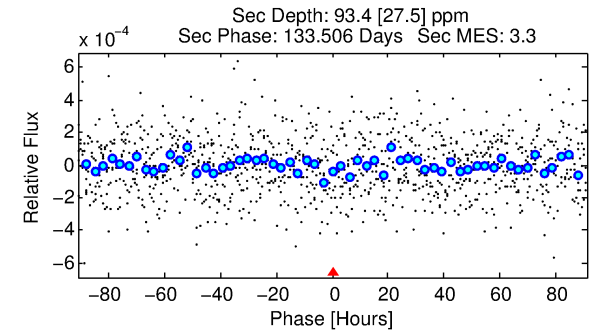
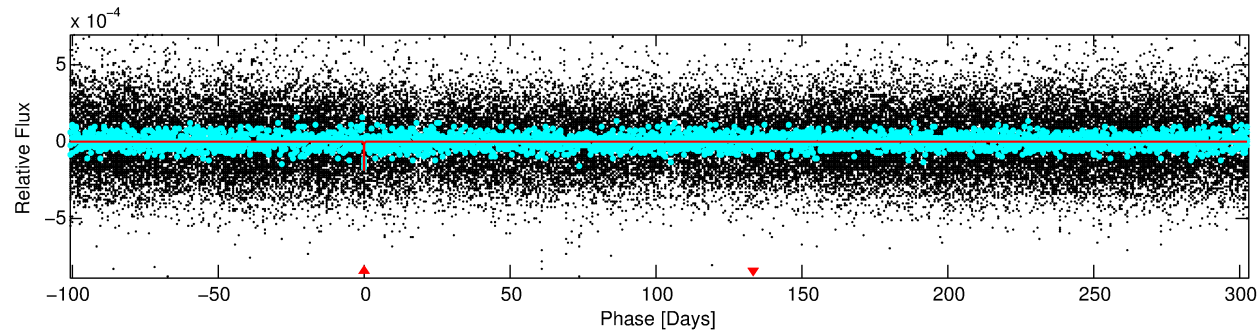
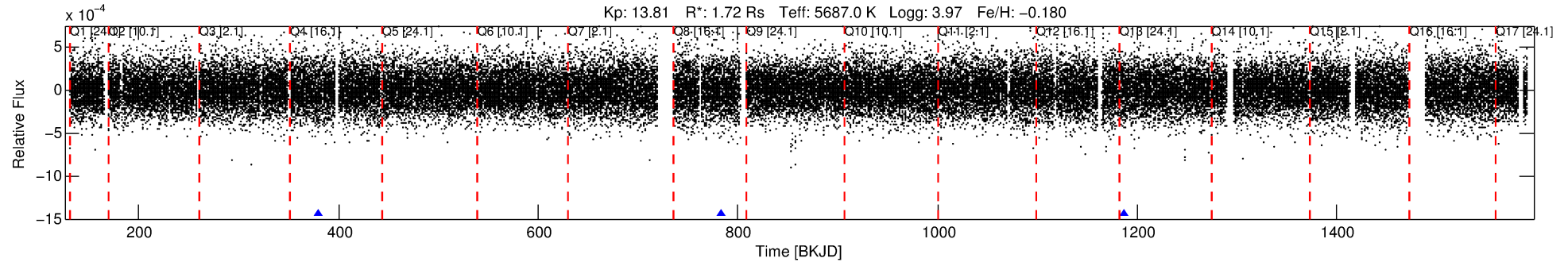
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008453581-01

No Significant Match Found

DV One-Page Summary

KIC: 8453581 Candidate: 1 of 1 Period: 403.676 d



DV Fit Results:

Period = 403.67589 [0.01520] d
Epoch = 380.0543 [0.0267] BKJD
Rp/R* = 0.0133 [0.0059]
a/R* = 131.80 [262.01]
b = 0.78 [1.01]
Seff = 2.43 [1.99]
Teq = 318 [65] K
Rp = 2.50 [1.60] Re
a = 1.0668 [0.5196] AU
Ag = 9378.80 [11549.91] [0.81σ]
Teffp = 4842 [1132] K [3.99σ]

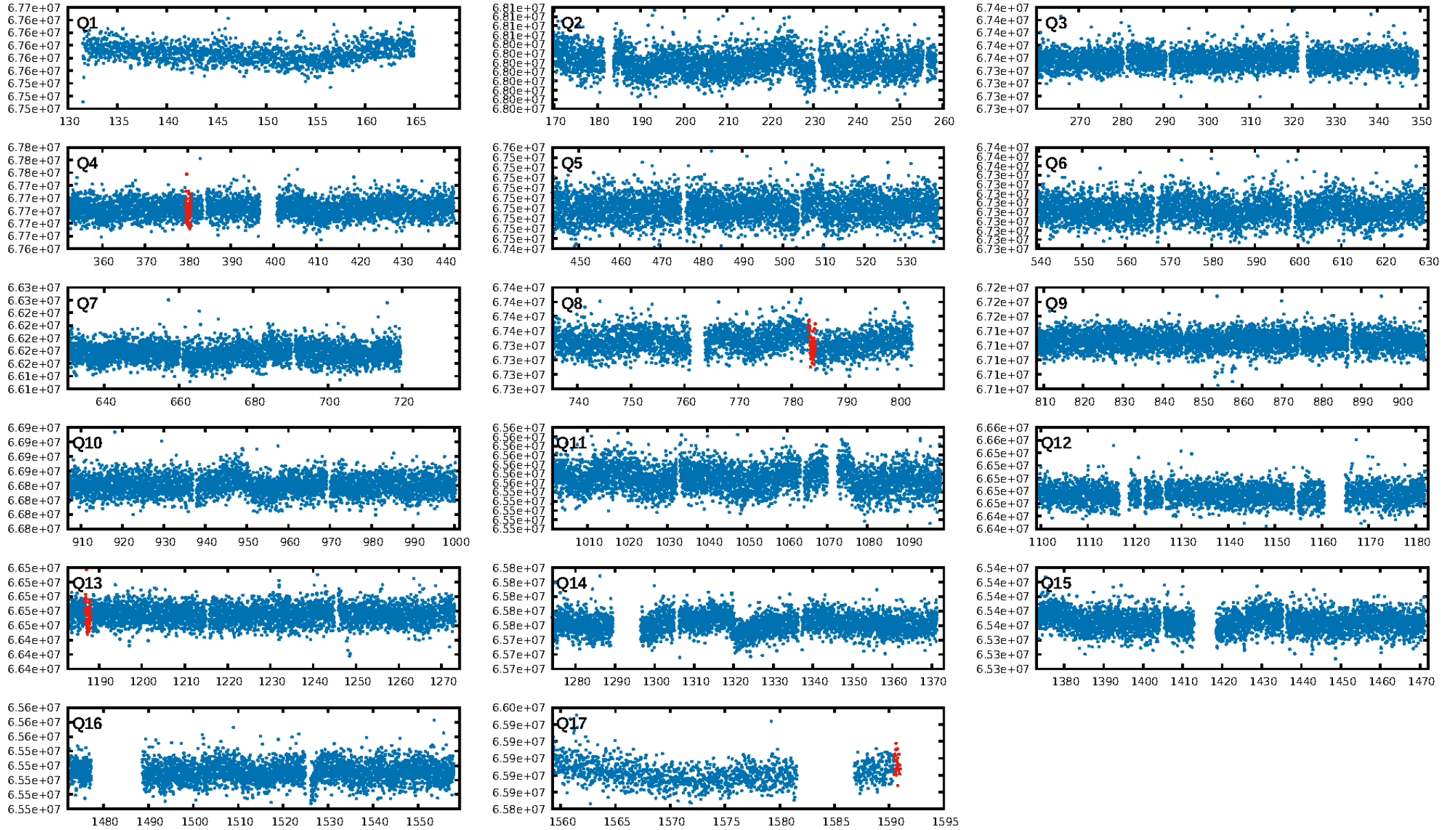
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.23e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.233
Centroid-sig: 14.7%
Centroid-so: 2.724 arcsec [1.18σ]
OotOffset-rm: 4.723 arcsec [1.02σ]
KicOffset-rm: 4.740 arcsec [1.01σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

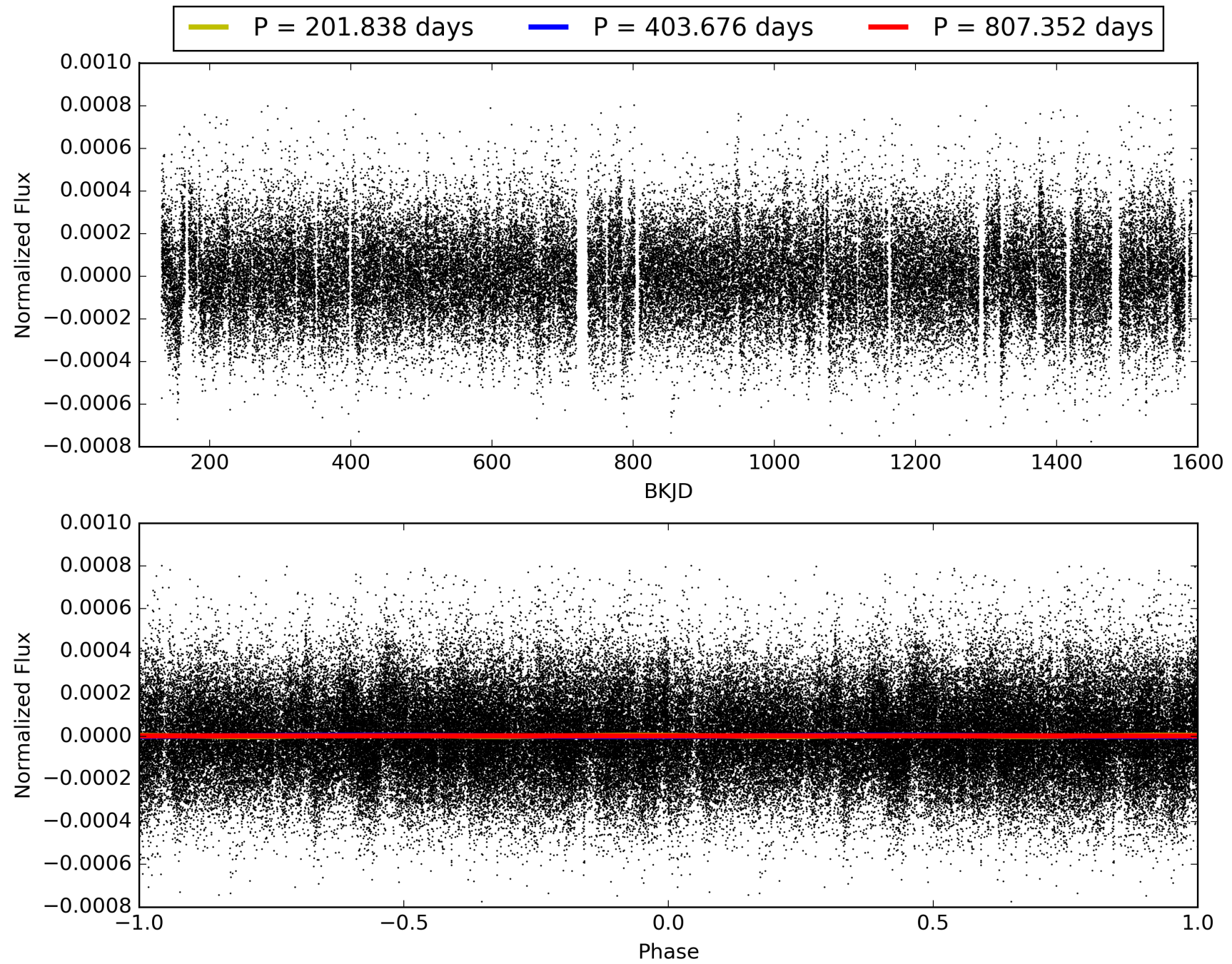
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:56:35 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008453581-01, PDC Light Curves

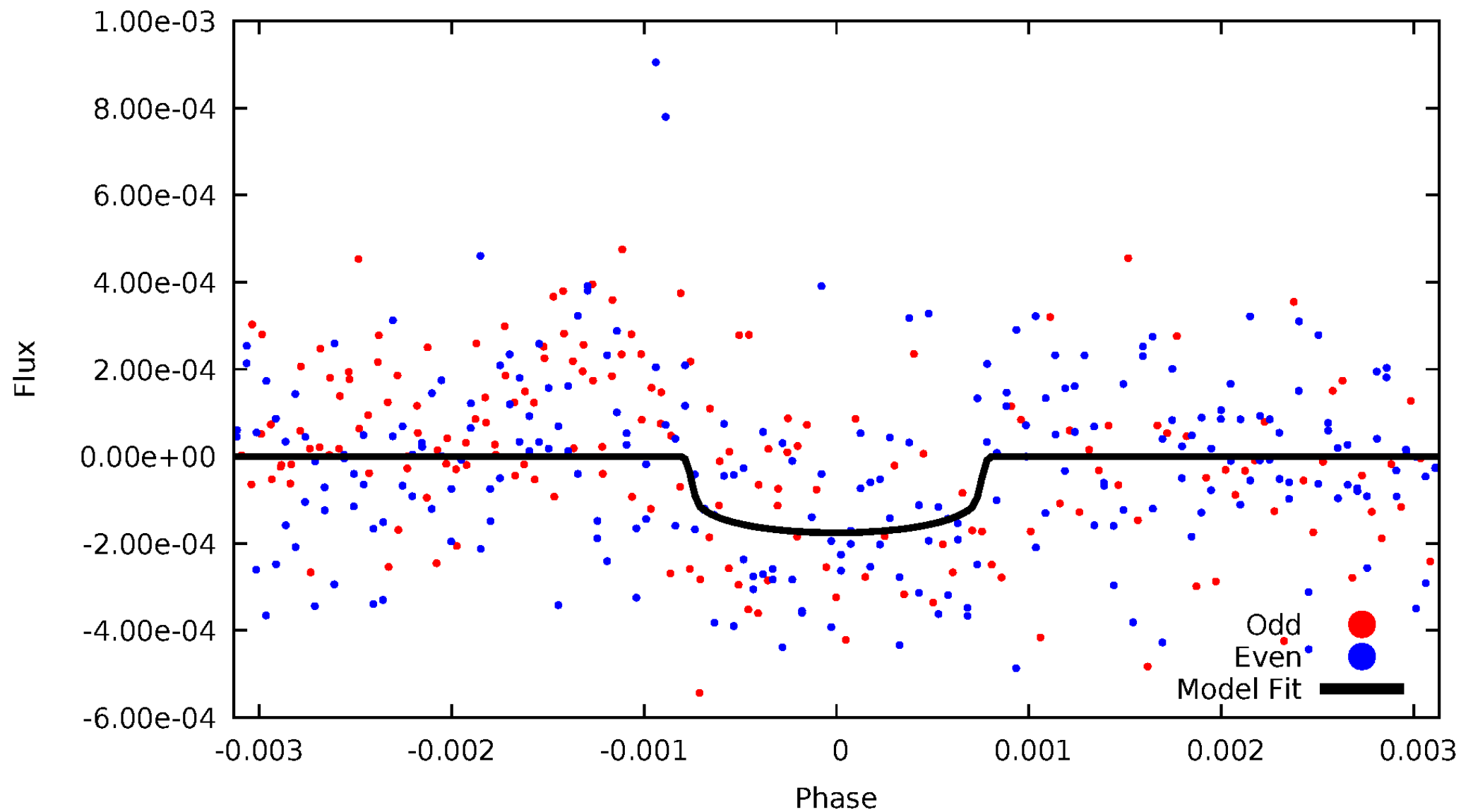


TCE 008453581-01



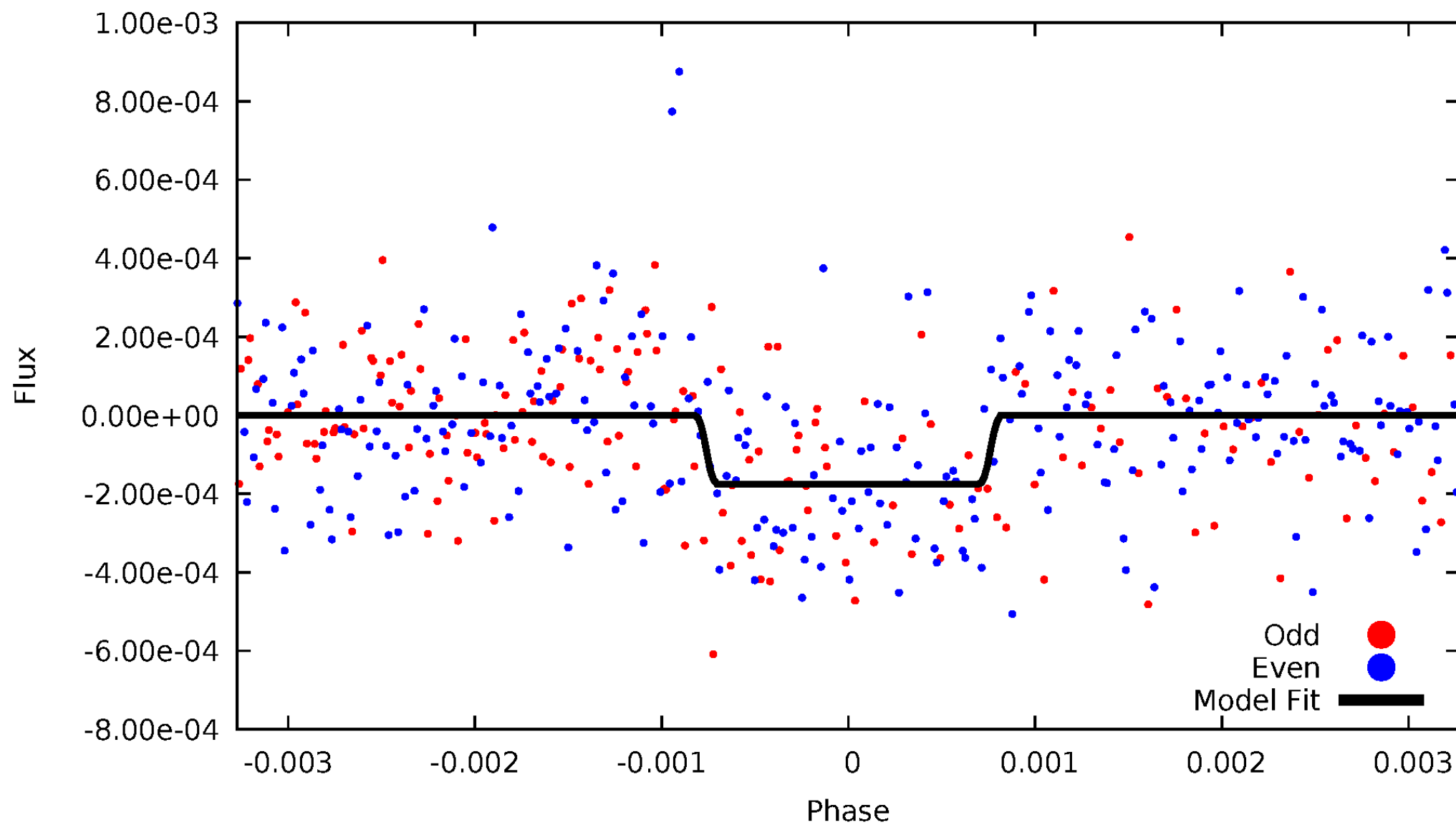
DV Odd/Even

TCE 008453581-01



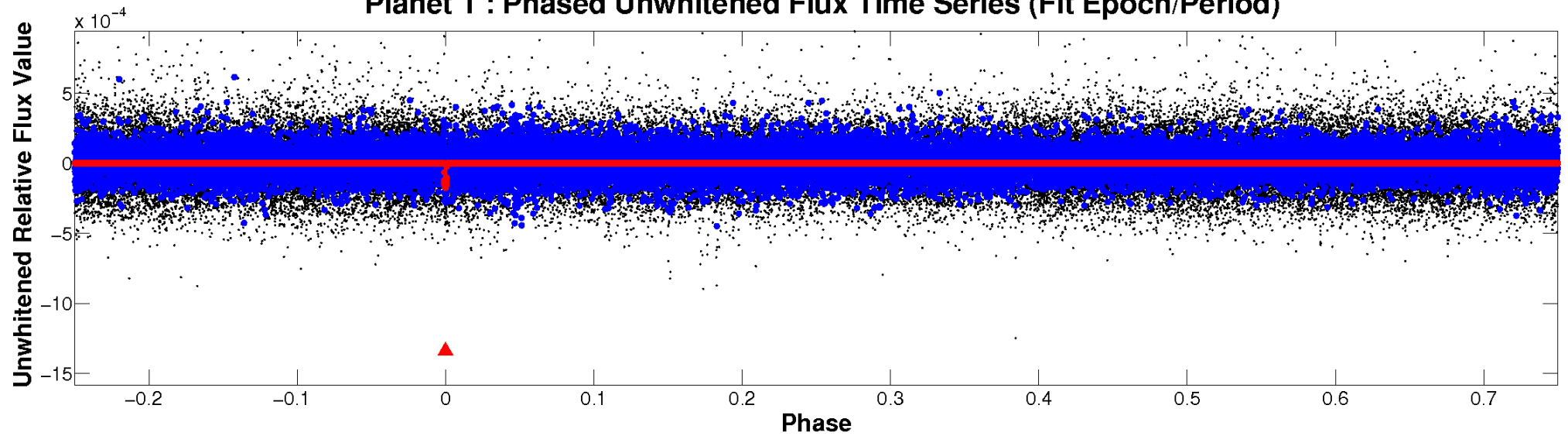
ALT Odd/Even

TCE 008453581-01

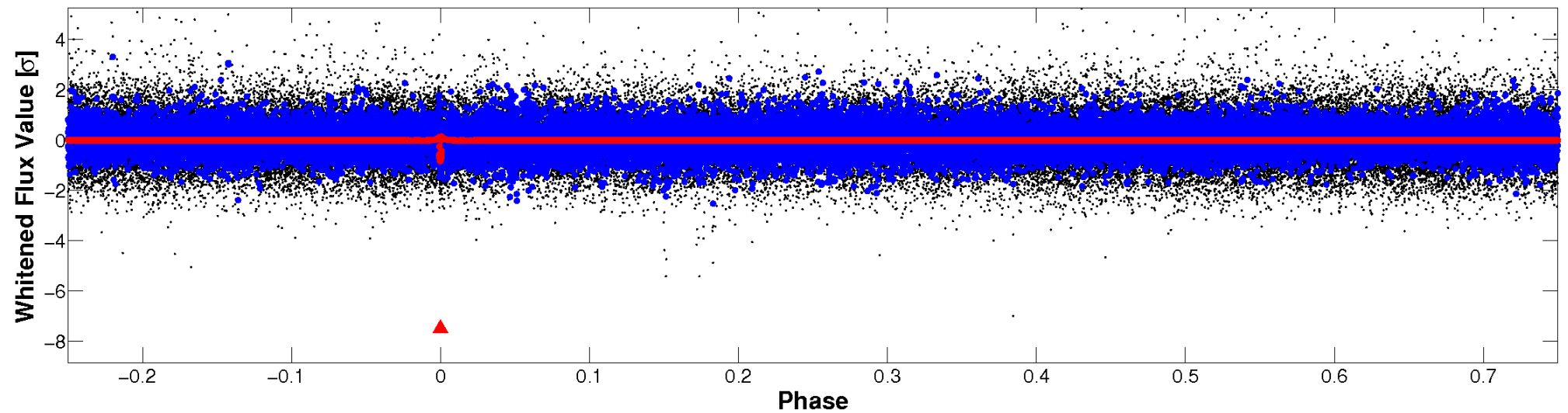


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008453581-01 $P=403.675893$ Days $T_0=380.054325$ (BKJD)



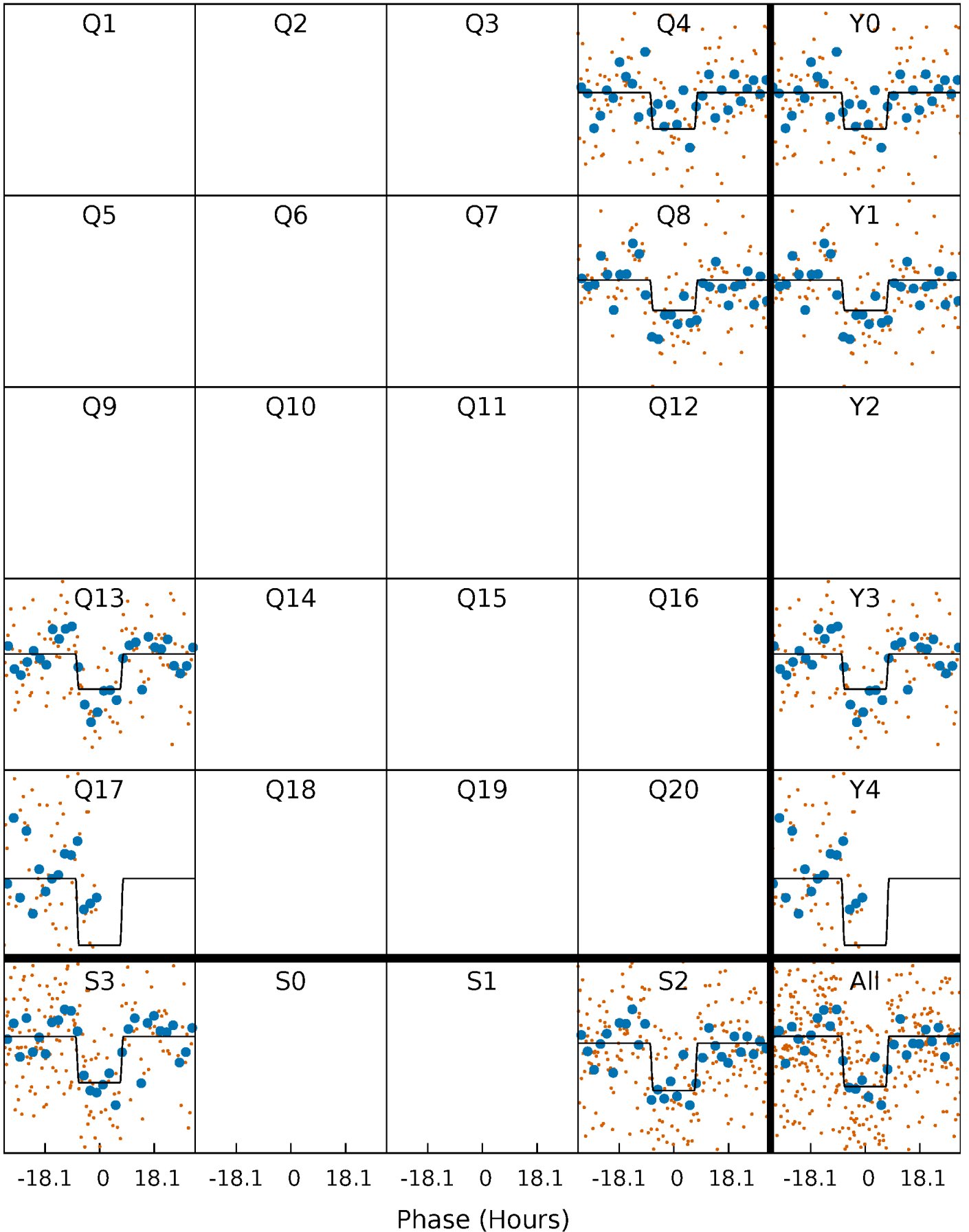
DV Quarter-Phased Transit Curves

TCE 008453581-01 $P=403.675893$ Days $T_0=380.054325$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

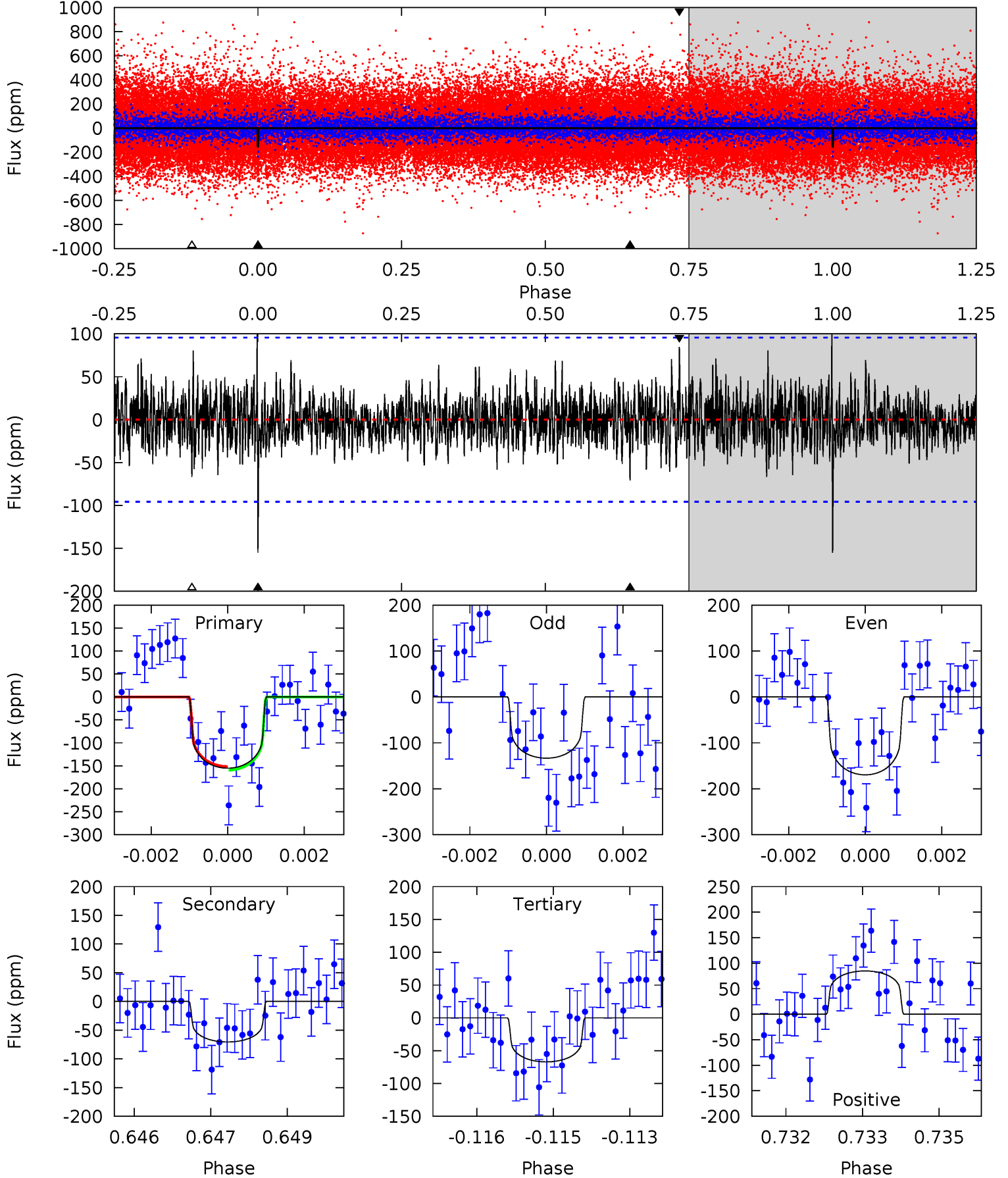
TCE 008453581-01 P=403.658167 Days $T_0=380.076761$ (BKJD)



DV Model-Shift Uniqueness Test

008453581-01, P = 403.675893 Days, E = 380.054325 Days

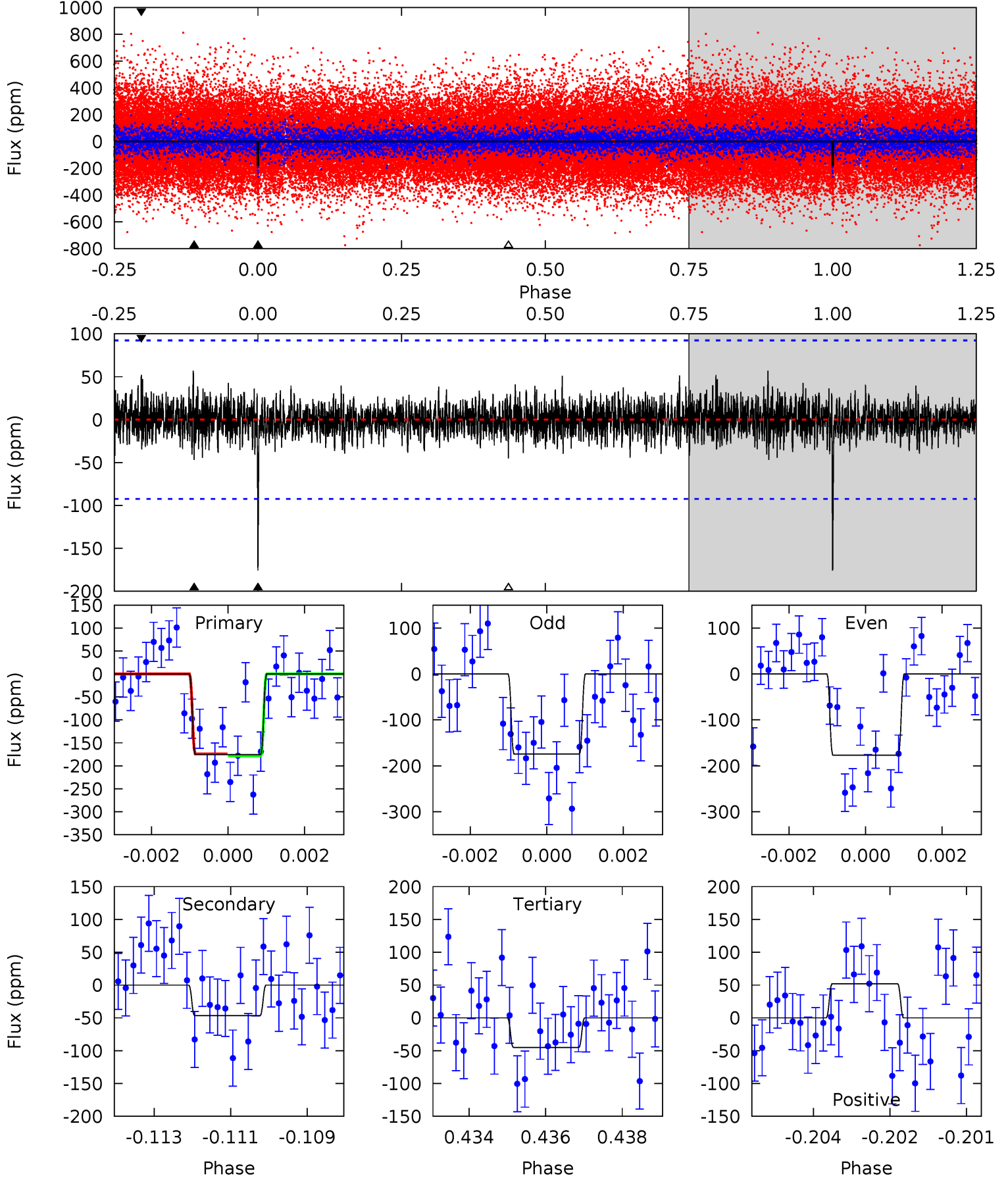
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.70	3.96	3.76	4.76	5.37	3.16	1.19	4.94	3.95	0.20	-0.80	1.00	0.90	0.39	0.22



Alt Model-Shift Uniqueness Test

008453581-01, $P = 403.658167$ Days, $E = 380.076761$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	2.71	2.61	3.02	5.36	3.15	0.80	7.59	7.18	0.09	-0.32	0.07	0.84	0.25	0.12



Stellar Parameters For KIC 008453581

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5687^{+169}_{-152}	$3.966^{+0.487}_{-0.162}$	$-0.180^{+0.300}_{-0.250}$	$1.716^{+0.433}_{-0.804}$	$0.994^{+0.117}_{-0.143}$	$0.277^{+1.366}_{-0.128}$
	+3%/-3%	+12%/-4%	+167%/-139%	+25%/-47%	+12%/-14%	+493%/-46%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008453581-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-71 ± 18	$2.31^{+1.12}_{-1.02}$	441^{+35}_{-55}	4625^{+1374}_{-595}	7931^{+19362}_{-4521}
Alt.	-47 ± 17	$2.29^{+1.28}_{-1.09}$	437^{+40}_{-58}	4275^{+1274}_{-586}	5350^{+15971}_{-3294}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

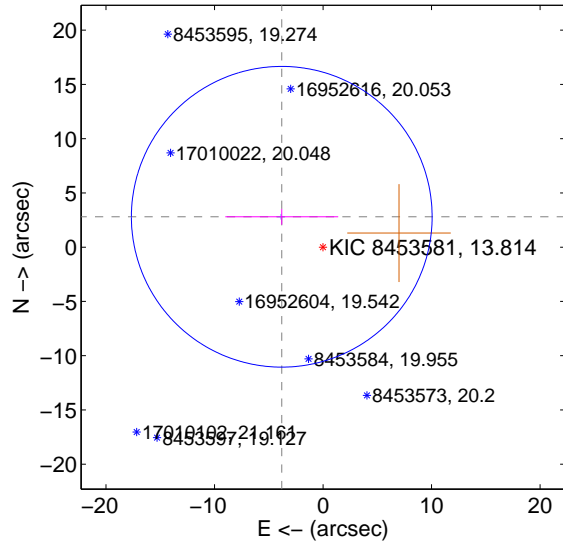
Supplemental centroid analysis for 008453581-01. Kepler magnitude: 13.81. Transit SNR 7.10

There are 1 quarters with good PRF difference image offsets

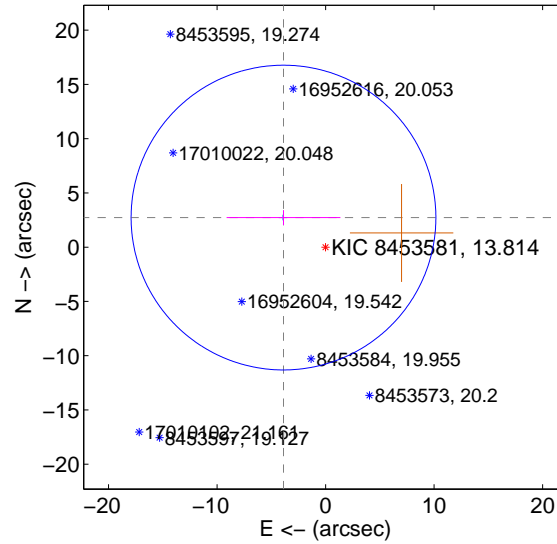
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.723 ± 4.618	1.02	3.803 ± 5.203	2.801 ± 0.724
PRF-fit source offset from KIC position	4.740 ± 4.680	1.01	3.877 ± 5.242	2.727 ± 0.684
photometric centroid source offset	2.72 ± 2.31	1.18	2.41 ± 2.38	1.27 ± 2.03

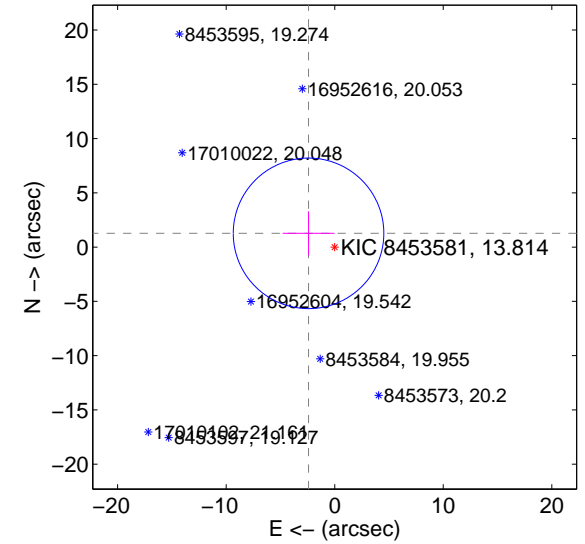
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

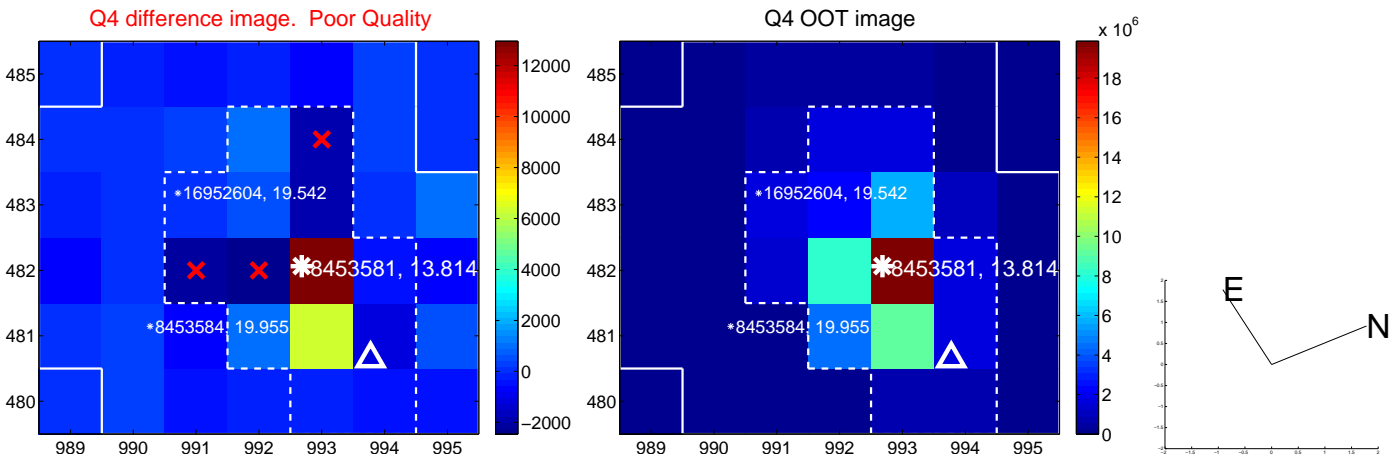


offset from photometric centroids

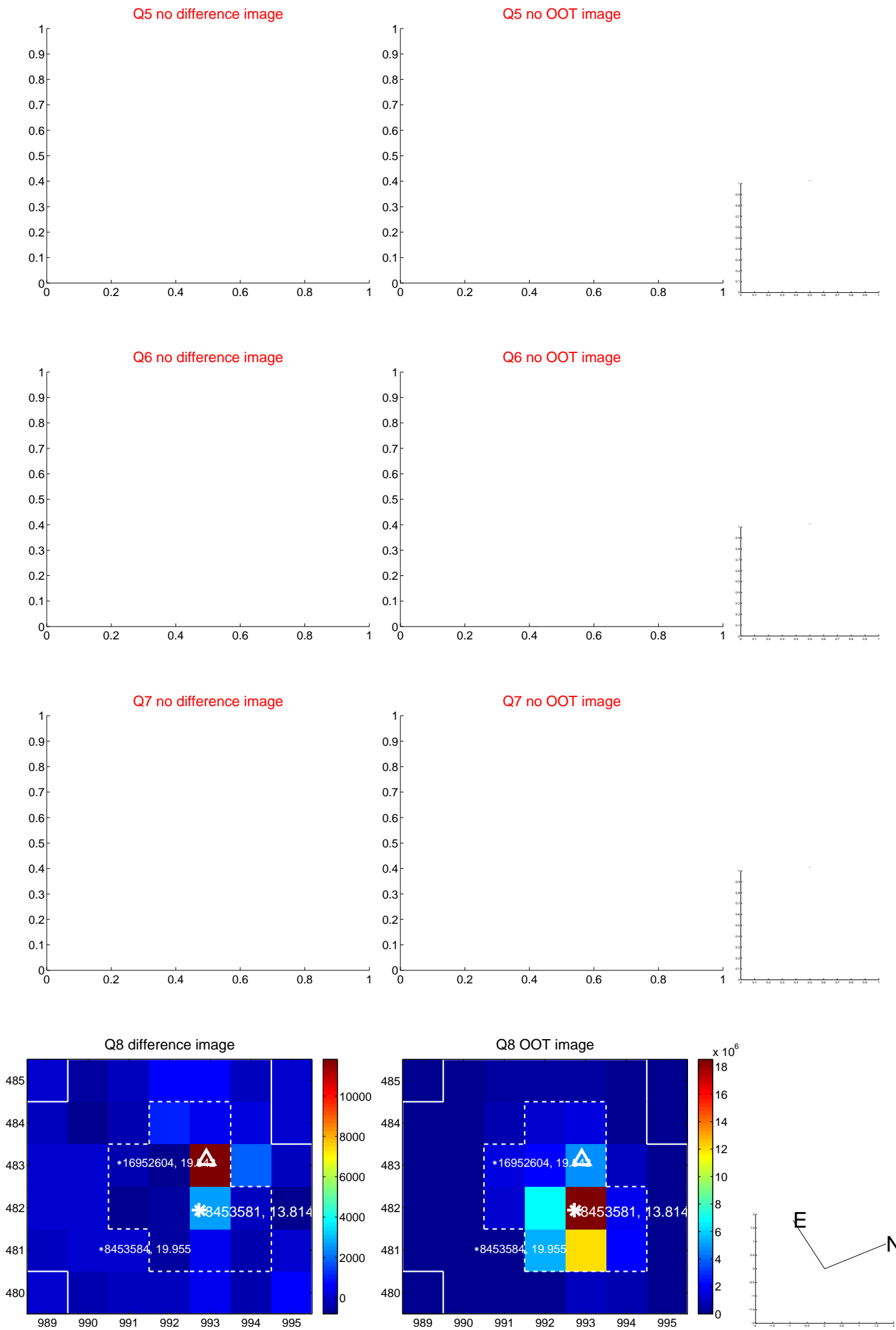


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



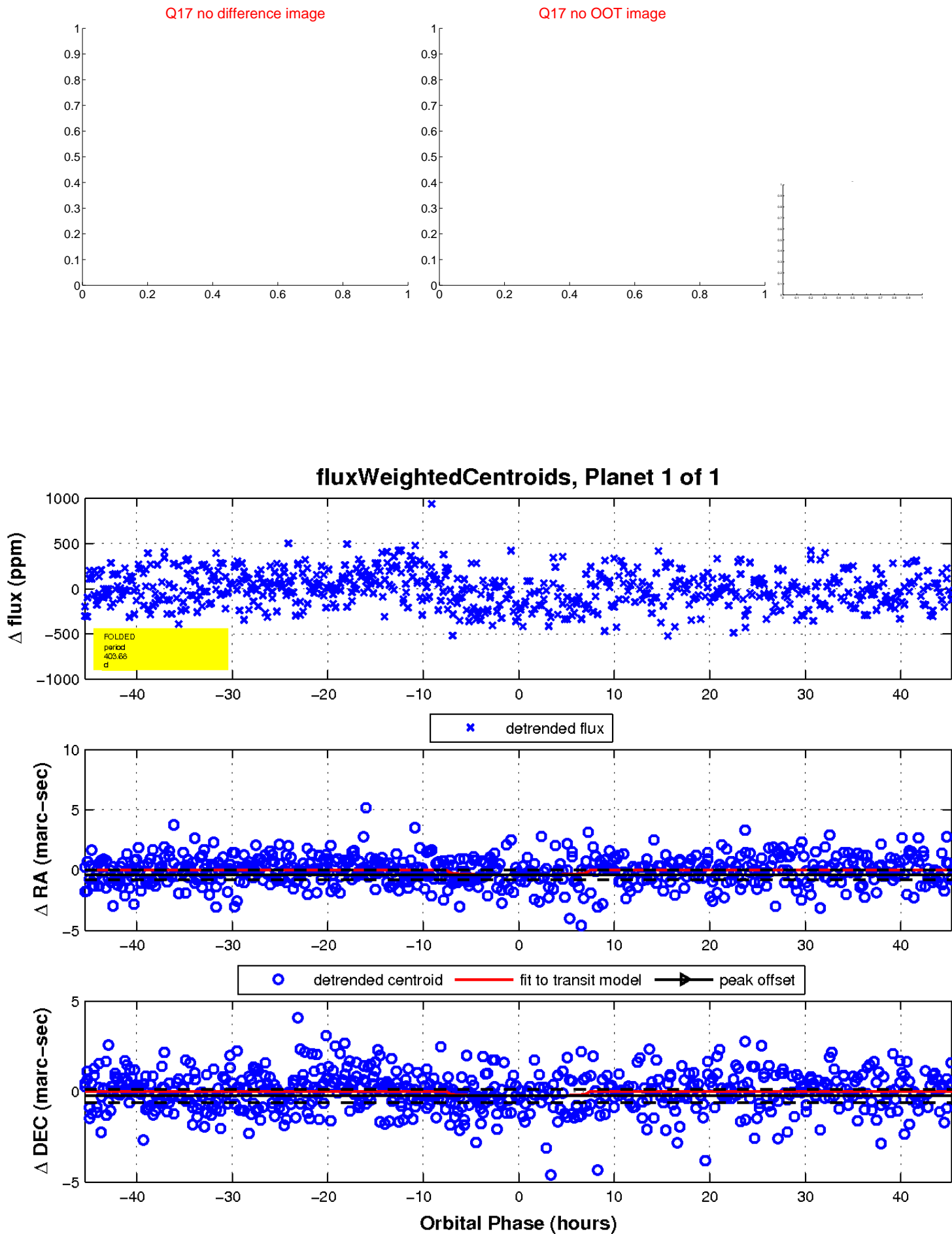
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

